

AMENDMENTS TO THE CLAIMS:

Please cancel claims 29, 30, and 32, without prejudice or disclaimer of their subject matter, and amend claims 24, 31, 33, 34, 37, 39, and 43, as indicated below. This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. - 23. (Canceled)

24. (Currently Amended) An integrated optical device comprising:

a first and a second integrated waveguides arranged so as to be in optical coupling relationship in a first and a second spaced-apart coupling regions and having respective optically uncoupled waveguide sections in between the first and second coupling regions; and

a first and a second modulated refractive index structures, each one formed along a respective uncoupled waveguide section and comprising a plurality of pairs at least one pair of regions having a first refractive index n_1 and, respectively, a second refractive index n_2 greater than the first, said regions being adjacent to each other along the respective waveguide section,

said plurality of pairs of regions ~~of mutually different refractive index~~ comprising a portion of the respective uncoupled waveguide section and a gap formed in the uncoupled waveguide section, the percentage difference

$\Delta n = 100 \times (n_2/n_1 - 1)$ [%] between said first and second refractive indexes being greater than 1.5%,
wherein said plurality of pairs of regions comprises a plurality of transmissive pairs of regions for transmitting optical signals with wavelengths within a prescribed wavelength pass band, and a plurality of reflective pairs of regions for reflecting optical signals with wavelengths within a prescribed wavelength stop band containing the pass band, and further wherein
at least one dimension varies between the dimensions of the plurality of transmissive pairs of regions in a light propagation direction and a number of reflective pairs of regions placed between consecutive transmissive pairs of regions.

25. (Previously Presented) The integrated optical device according to claim 24, wherein said percentage difference is greater than 10%.

26. (Previously Presented) The integrated optical device according to claim 25, wherein said percentage difference is greater than 50%.

27. (Previously Presented) The integrated optical device according to claim 24, wherein said first and a second integrated waveguides each comprise a core and a cladding, said gap extending at least across the entire cross-section of the core of the respective waveguide section.
28. (Previously Presented) The integrated optical device according to claim 24, wherein an interference between said regions of mutually different refractive index is arranged orthogonally to the light propagation direction in the respective uncoupled waveguide section.
29. - 30. (Canceled)
31. (Currently Amended) The integrated optical device according to claim ~~[[30]]~~ 24, wherein said pass band corresponds to at least one prescribed channel of a wavelength division multiplexed signal and said stop band is at least as wide as an overall wavelength spectrum region occupied by the wavelength division multiplexed signal.
32. (Canceled)
33. (Currently Amended) The integrated optical device according to claim ~~[[32]]~~ 24, wherein all the transmissive pairs have a same optical length in the light propagation direction.

34. (Currently Amended) The integrated optical device according to claim ~~[[32]]~~ 24, wherein the transmissive pairs have varying optical lengths in the light propagation direction.
35. (Previously Presented) The integrated optical device according to claim 33, wherein a number of reflective pairs between adjacent transmissive pairs varies along the respective waveguide section.
36. (Previously Presented) The integrated optical device according to claim 34, wherein a number of reflective pairs between adjacent transmissive pairs varies along the respective waveguide section.
37. (Currently Amended) The integrated optical device according to claim ~~[[30]]~~ 24, wherein the optical coupling regions have optical coupling factors approximately equal to 50%.
38. (Previously Presented) The integrated optical device according to claim 24, wherein the first and the second modulated refractive index structures are located along the respective uncoupled waveguide section in substantially identical positions with respect to the first coupling region.

39. (Currently Amended) The integrated optical device according to any one of claims ~~[[30]]~~ 31 or 33 to 38 inclusive, wherein the first waveguide has a first input section adjacent the first coupling region, and the second waveguide has a first and a second output sections, respectively, adjacent the second and the first coupling regions, and the device further comprises:

a first optical path from the first input section to the first output section, the first optical path propagating from the first input section to the first output section a first optical signal with wavelength in said pass band; and
a second optical path from the first input section to the second output section, the second optical path propagating from the first input section to the second output section a second optical signal with wavelength in said stop band but outside the pass band.

40. (Previously Presented) The integrated optical device according to claim 39, wherein the first waveguide further comprises a second input section adjacent the second coupling region, and the device further comprises a third optical path from the second input section to the second output section, the third optical path propagating from the second input section to the second output section a third second optical signal with wavelength in said pass band.

41. (Previously Presented) An integrated optical add/drop device adapted to receive an input wavelength division multiplexed optical signal including at least a first and a second optical signals differentiated by their wavelength bands and selectively extracting the first and the second optical signals from the input wavelength division multiplexed optical signal, comprising at least a first and a second integrated optical devices in accordance with claim 38, connected in cascade and having differentiated pass bands, corresponding to respective bands of the first and second optical signals.
42. (Previously Presented) The integrated optical add/drop device according to claim 41, wherein the second output section of the first integrated optical device is coupled to the first input section of the second integrated optical device.
43. (Currently Amended) A process for manufacturing an integrated optical device, comprising:
forming on a substrate at least a first and a second integrated waveguides each comprising a core and a cladding, said waveguides being arranged so as to be in optical coupling relationship in a first and a second spaced-apart coupling regions with respective optically uncoupled waveguide sections in between the first and second coupling regions; and
forming along the optically uncoupled waveguide sections respective first and second modulated refractive index regions, each comprising a plurality of pairs ~~at least one pair~~ of regions having a first refractive index n_1 and, respectively, a second refractive index n_2 greater than the first, said

regions being adjacent to each other along the respective waveguide section,

said forming the plurality of pairs ~~at least one pair~~ of regions comprising cutting away a portion of the respective waveguide section for defining a gap between two adjacent portions of the respective waveguide section, and making the percentage difference $\Delta n = 100 \times (n_2/n_1 - 1) [\%]$ between said first and second refractive indexes greater than 1.5%,

wherein said plurality of pairs of regions comprises a plurality of transmissive pairs of regions for transmitting optical signals with wavelengths within a prescribed wavelength pass band, and a plurality of reflective pairs of regions for reflecting optical signals with wavelengths within a prescribed wavelength stop band containing the pass band, and further wherein

at least one dimension varies between the dimensions of the plurality of transmissive pairs of regions in a light propagation direction and a number of reflective pairs of regions placed between consecutive transmissive pairs of regions.

44. (Previously Presented) The process according to claim 43, wherein said cutting away is performed simultaneously in the optically uncoupled waveguide sections.
45. (Previously Presented) The process according to claim 44, wherein said cutting away comprises using a mask defining a pattern of cuts to be formed in the optically uncoupled waveguide sections, and selectively removing the optically uncoupled waveguide sections according to the pattern defined by the mask.
46. (Previously Presented) The process according to claim 43, further comprising filling said gaps with a substance having a refractive index different from that of the waveguide sections.
47. (Previously Presented) The processing according to claim 46, wherein said substance is air.